

A NEW SPECIES OF *CYCLORANA* (ANURA: HYLIDAE) FROM NORTHERN QUEENSLAND

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Summary

VAN BEURDEN, E. & McDONALD, K. R. (1980) A new species of *Cyclorana* (Anura: Hylidae) from northern Queensland. *Trans. R. Soc. S. Aust.* **104**(6), 193-195, 28 November, 1980.

Cyclorana manya sp. nov. from Cape York Peninsula, northern Queensland, is described. It is small compared with known congeners and has close affinities with *C. brevipes* and *C. longipes*.

Introduction

In a partial revision of frogs of the genus *Cyclorana* Steindachner, Tyler & Martin (1977) described five new species and raised the total to 10, highlighting the diversity within the genus. We describe a further species from northern Queensland. It resembles *C. longipes* Tyler & Martin but is considerably smaller than this or any other congener.

Methods

The type specimens are lodged in the Queensland Museum (QM), and South Australian Museum (SAM). Measurements were obtained using a pair of Helios dial calipers (to nearest 0.1 mm). Eye to naris distance (E-N) is the distance from the posterior margin of the external naris to the anterior margin of the eye. Internarial span (IN) is the distance between the medial margins of the external nares. Other measurements are as defined and abbreviated by Tyler and Martin (1975): HL = head length, HW = head width, S-V = snout-vent length, TL = tibia length.

Mating calls of two individuals were recorded on a Uher 4000 report tape recorder at a tape speed of 19 cm/sec using a Grampian DP4 microphone. Air temperature was recorded within 3 cm of the frog using a Schultheis mercury thermometer. One call of each individual was analysed using a Kay Model 6061-A Sono-Graph audiospectrograph set on a narrow-band (45 Hz band-pass), and a response curve setting of FL-1. This provided measures of call duration, band spacing, lowest and highest frequency. Pulse repetition rate and fundamental frequency were taken

from photographs (Polaroid B & W type 107) of oscilloscope traces using a time scale of 2 msec/cm.

Cyclorana manya sp. nov.

FIGS 1-2

Definition: A small species (male adults 27.2-29.9 mm; female 27.5 mm) with short hind limbs (TL/S-V 0.32-0.38). The head is bluntly rounded and the eyes are large (E/E-N = 1.71). There is no dark head stripe from the tip of the snout to the eye or from the eye to the axilla.

Description: Holotype (QM J34886), an adult male collected between Coen airport and Deep Creek crossing 25 km N. of Coen township (13°52'S, 143°12'E), Cape York Peninsula, Queensland, by E. van Beurden, M. Sabath, B. Easteal, M. Robinson and J. Sparkes on 17.1.1979.

Habitus stout, body globose (Fig. 1). Size small. Head broadly triangular when viewed from above, flattened and broader than long.



Fig. 1. Paratype of *Cyclorana manya* shortly after capture near Coen.

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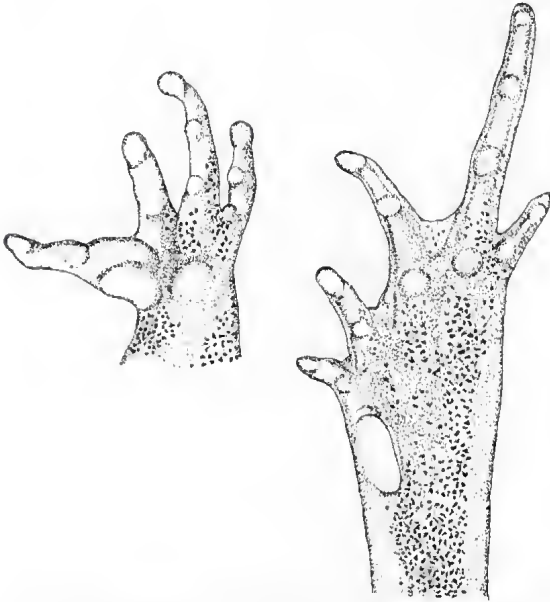


Fig. 2. Palmar and plantar aspects of hand and foot of holotype of *Cyclorana manya* (QM J34886).

Snout rounded when viewed from above and bluntly rounded in profile (HL/HW 0.89). Nostrils inconspicuous and dorsally inclined. Canthus rostralis slightly curved but not prominent. Eye prominent, its width more than $1\frac{1}{2}$ times eye to naris distance. Upper part of iris golden, lower part, silver/grey and anterior and posterior portions black.

Tympanum distinct except for upper and posterior margins which are obscured by supra-tympanic fold.

Tongue ovate, about $\frac{1}{2}$ free behind and just over $\frac{1}{2}$ as wide as gape. Choanae large and widely spaced. Vomerine teeth present on obliquely converging elevations, between posterior margins of choanae.

Fingers short and unwebbed (Fig. 2) without lateral fringes. Subarticular tubercles prominent; paired nuptial pads on each thumb.

Toes slightly webbed. Webbing on medial side of 5th toe does not reach subarticular tubercle at base of penultimate phalanx. Relative toe lengths $4 > 3 > 5 > 2 > 1$. Prominent inner metatarsal tubercles, twice length of first toe (Fig. 2). Hind limbs short (TL/S-V 0.34).

Skin of anterior portion of thigh smooth; that on posterior pitted.

Dorsal body markings of preserved specimen consist of dark grey-brown irregular blotches on lighter brown background. These blotches diminish in size and intensity on flanks and

posterior parts of dorsum. A pale, unbroken vertebral stripe runs from tip of snout to tip of urostyle. A broad, light-coloured post-orbital bar crosses head posteriorly at level of tympana. Top of head dark grey-brown while sides, extending down to upper lip, are pale brown.

Ventral surfaces of body and limbs pale cream, as is lower lip. Skin beneath vocal sac darkly pigmented, and skin of abdomen translucent. Posterior region of thigh and flanks pale brown with darker brown blotches.

Dimensions: S-V 29.9 mm; TL 9.5 mm; HL 9.2 mm; HW 11.2 mm; E-N 2.1 mm; IN 1.5 mm; E 3.8 mm; T 1.2 mm.

Variation: Two paratypes: a mature female, QM J34888, and a mature male QM J34889, were collected with the holotype. Twelve further paratypes SAM R17420-R17424; QM J36894-900) including nine mature males, and three immature individuals were collected by R. G. Atherton and K. R. McDonald at the southern end of Coen air strip ($13^{\circ}46'S$, $143^{\circ}07'E$) on 6-8.iii, 1979.

The S-V range is 27.2-29.9; the largest specimen being the male holotype. The head is consistently broader than long (HL/HW 0.82-0.96) whilst the nostrils are narrowly spaced (E-N/IN 1.25-1.69). The hind limbs are consistently short (TL/S-V 0.32-0.38).

Colour and pattern are variable. The colour of the dark blotches on the dorsum varies from light grey to a rich, dark brown-grey. The proportion of the dorsum covered by these blotches varies from about 55-85%. The vertebral stripe varies in its conspicuousness and the variation is not consistent with the intensity of blotches.

All specimens larger than 25 mm S-V, except the female, were males with pigmented vocal sacs and nuptial pads. The single female was gravid and contained about 100 eggs, each about 1 mm diameter. Specimens less than 25 mm lacked eggs or male secondary sex characteristics.

Mating Call: The call is a short plaintive bleat of 1.1-1.3 sec. duration (Fig. 3). The dominant frequency is about 2500 Hz and the call consists of 5-8 distinct bands separated by 328 Hz, and ranging 400-3000 Hz. Pulse repetition rate is 294 pulses/sec., and the call is repeated 10-16 times per minute. Calling males were recorded and collected while floating, legs extended, at the surface of shallow

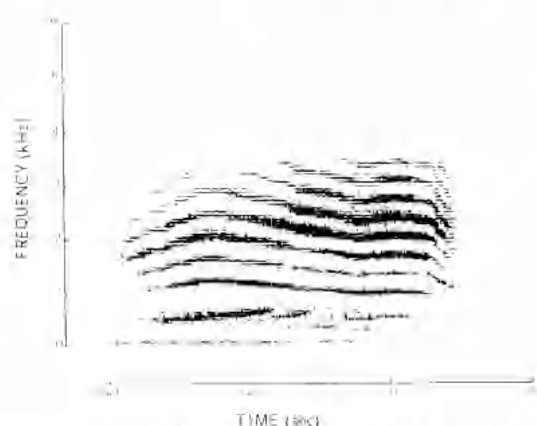


Fig. 3. Audiospectrogram of mating call of *Cyclorana manya* recorded during rain at Coen Airport. (Air temp. 24.8°C, band pass = 45 Hz.)

temporary puddles, in grassy depressions during heavy rains. Air temperature was 24.8°C.

Breeding: The presence of juveniles in March and the calling activity in heavy rainfall suggests that this species is an opportunistic, summer breeder. Little calling was heard on nights when rain was light, and there was none on the dry nights following that on which recordings were made.

Comparison with other species: Comparisons are based on descriptions provided by Tyler & Martin (1977). The most obvious difference between *C. manya* and congeners is the S-V of adult males which is 4.8 mm shorter than the smallest adult previously reported. It also lacks a head stripe from the snout to the eye and eye to axilla. The range of E-N/IN overlaps only *C. longipes*. Call characteristics are most similar to those of *C. brevipes* Gunther. The call duration of the two species is about 1 sec., and the dominant frequency has 3-4 side

bands above and below it. The call of *C. manya* differs from that of *C. brevipes* in that the dominant frequency is higher and band spacing is wider. Coloration most closely resembles that of *C. longipes* except that dark head pigmentation terminates at a broad, pale transverse bar extending around the tympanum and down to the axilla.

Four frogs (DT-D 0737-40) taken at Lower Archer River on Cape York Peninsula by J. Thompson in 1933 may represent a form intermediate between *C. longipes* and *C. manya*. Their E-N/IN ratios (1.22-1.25) and bold head coloration are similar to *C. longipes*. S-V (32.2 and 40.7 for the two adults) is intermediate between *C. manya* and the larger *C. longipes*.

Etymology: 'Manya' is the Aboriginal word for 'small' in the local dialect (Wik-munken) at Coen. This is appropriate for the smallest 'water-holding frog' described.

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